

# McCORMICK AND BAXTER CREOSOTING COMPANY SUPERFUND SITE PORTLAND, OREGON



State of Oregon  
Department of  
Environmental  
Quality



February 2006

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OREGON STATE DEPARTMENT OF ENVIRONMENTAL QUALITY  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
ECOLOGY & ENVIRONMENT, INC.  
U.S. ARMY CORP OF ENGINEERS  
CITY OF PORTLAND

USEPA SF



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## McCormick & Baxter

### Project Overview

The McCormick & Baxter site is located on the northeast shore of the Willamette River in north Portland. The legal address is 6900 North Edgewater Ave., Portland, Oregon 97203, and DEQ's Environmental Cleanup Site Information (ECSI) number for this site is 74. The site includes 41 acres of land and 23 acres of sediments beneath the Willamette River.

McCormick & Baxter Creosoting Company operated between 1944 and 1991, treating wood products with creosote, pentachlorophenol, and inorganic (arsenic, copper, chromium, and zinc) preservative solutions. Historically, process wastewaters were discharged directly to the Willamette River, and other process wastes were dumped in several areas of the site. Significant concentrations of wood-treating chemicals have been found in soil and groundwater at the site and in river sediments adjacent to the site.

The United States Environmental Protection Agency (EPA) listed the site on the National Priorities List (NPL) in June 1994 based on information collected by DEQ between September 1990 and September 1992. The EPA also designated the Oregon Department of Environmental Quality (DEQ) as the lead agency for implementing the selected remedy while funding for remedial design and construction is being provided by EPA.

The DEQ implemented a number of interim removal measures between 1992 and 1994, including plant demolition, sludge and soil removals, and extraction of creosote from the groundwater aquifers.

The Record of Decision (ROD) was issued by EPA and DEQ in April 1996 after considering public comments on the Proposed Cleanup Plan. The Remedy addressed contaminated groundwater, sediment and soil.

A component of the groundwater remedy, initiated in 1994, consisted of an automated creosote extraction and groundwater treatment system. However, due to poor product recovery and high operating costs, the automated system was discontinued in late 2000. Creosote is currently being recovered by passive and manual methods. Approximately 6,000 gallons have been recovered since 1995. A contingency groundwater remedy was implemented in the

summer of 2003, with the construction of a combination steel sheet pile and soil Bentonite slurry wall surrounding 18 acres. The purpose of the barrier wall is to prevent migration of creosote to the Willamette River.



The sediment remedy was implemented in 2004 and primarily consisted of a sand cap placed over 23 acres of contaminated sediment. An oil adsorptive material known as organophyllic clay was used in the creosote seep areas. To protect the cap from erosion, the sand and organophyllic clay were armored with a combination of rock and articulated concrete blocks. The sediment remedy also included the regrading and capping of the riverbank with two feet of topsoil. Revegetation of the capped riverbank with native trees and shrubs will occur in February 2006 after the soil has been stabilized with the native grasses planted in November 2004. Capping of a one acre portion of the contaminated sediments along a high pressure sewer main was completed in September 2005.

Implementation of the soil remedy began in March 1999 with the removal of 33,000 tons of highly contaminated soil and debris. The soil remedy was completed in September 2005 following installation of a combination impermeable/earthen cap – the impermeable portion covering the area within the subsurface barrier wall.

### Environmental Concerns and Ongoing Work

The primary risks associated with the site are from potential exposure to wood-treating compounds in soil, river sediments and surface water near the site and the Oregon Department of Human Services maintains a health advisory for crayfish harvesting within 1,000 feet of the site (see Oregon Sport Fishing Regulations). DEQ is currently evaluating the effectiveness of the cleanup remedies.



State of Oregon  
Department of  
Environmental  
Quality

Environmental  
Cleanup Division

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[www.deq.state.or.us](http://www.deq.state.or.us)

[www.deq.state.or.us/mwr/mccormick.htm](http://www.deq.state.or.us/mwr/mccormick.htm)



# **McCormick and Baxter Creosoting Company Superfund Site Portland, Oregon**

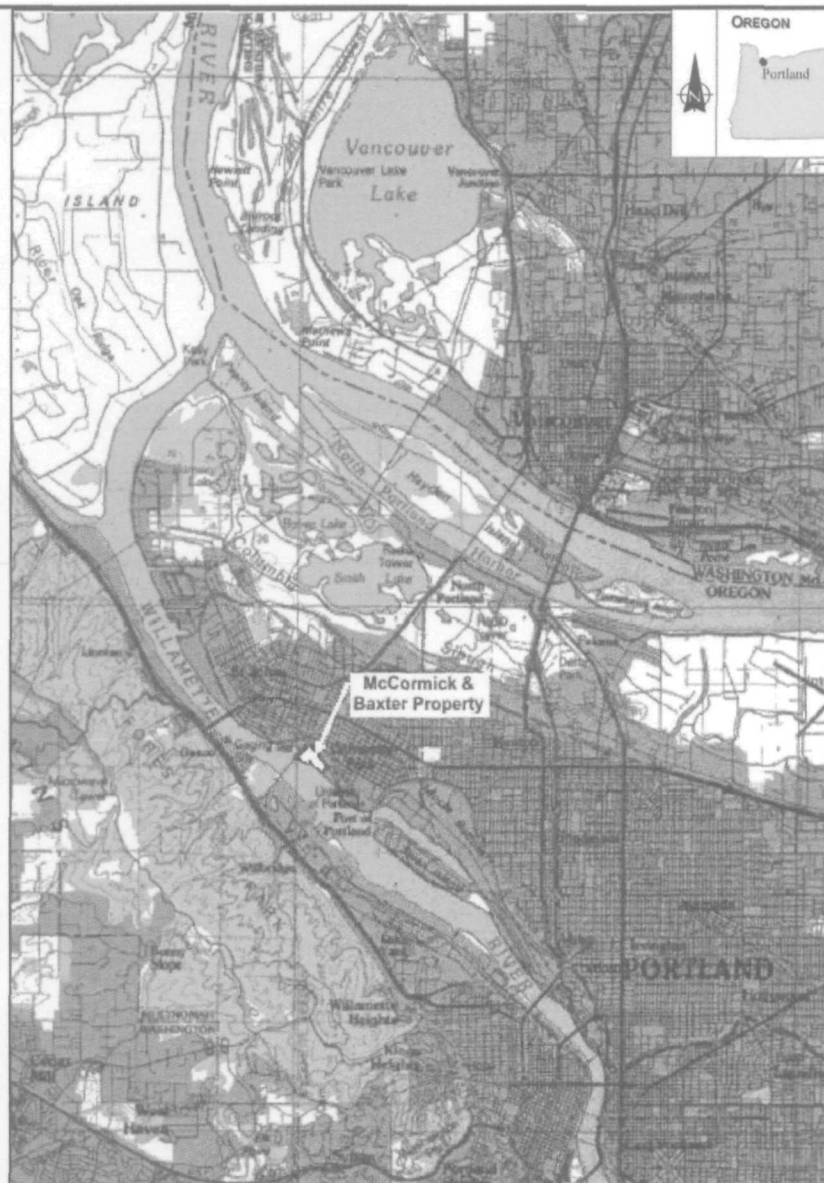
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## **Pictorial Overview**

**Site Discovery to Site Cleanup  
(1989 through 2006)**

06.16.2005 08:23

(February 2006)



**ecology and environment, inc.**  
International Specialists in the Environment  
Seattle, Washington

**MCCORMICK AND BAXTER  
CREOSOTING COMPANY SITE**  
Portland, Oregon

**SITE VICINITY MAP**

Date:  
12/13/01

10:0007490B051302 site vicinity.cdr

**Oregon Department of Environmental  
Quality (DEQ)**

**Project Manager:**

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**U.S. Environmental Protection  
Agency (EPA)**

**Project Manager:**

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**DEQ Consultants:**

- Ecology & Environment, Inc.
- US Army Corp of Engineers
- Archaeological Investigations Northwest

**Additional Support:**

- City of Portland
- University of Texas
- Oregon State University

**Project Web Site:**

[www.deq.state.or.us/nwr/mccormick.htm](http://www.deq.state.or.us/nwr/mccormick.htm)



1990



# *Then & Now*

June 2005



August 2001



## *Then & Now*

June 2005



06/21/2005 15:34



## *Historic Operations*

# **McCORMICK & BAXTER**

## **CREOSOTING CO.**

### **PRESERVATIVES:**

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#### **PENTA IN OIL**

A frequently used treatment for utility poles, crossarms and timbers.

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#### **CELLON®**

Penta in liquified petroleum gas for maximum penetration in woods with hard heartwood.

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#### **CREOSOTE**

Excellent treatment for poles subject to environmental extremes.

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#### **CHEMONITE®**

A copper-based treatment excellent for extreme conditions. Penetrates deeply into hard-to-treat woods such as Douglas Fir.



*Initial Response  
and Investigation  
(1990 and 1991)*

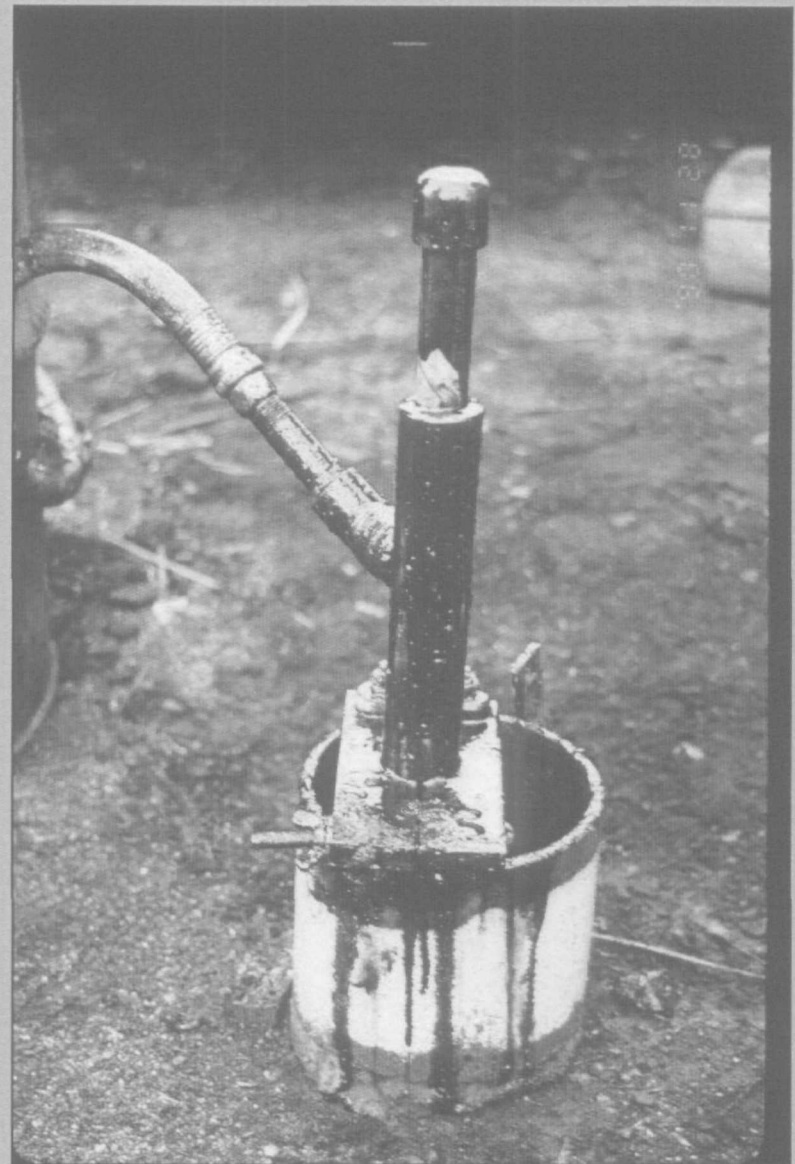




*Creosote Extraction – 6000 gallons  
(1991 through Present)*



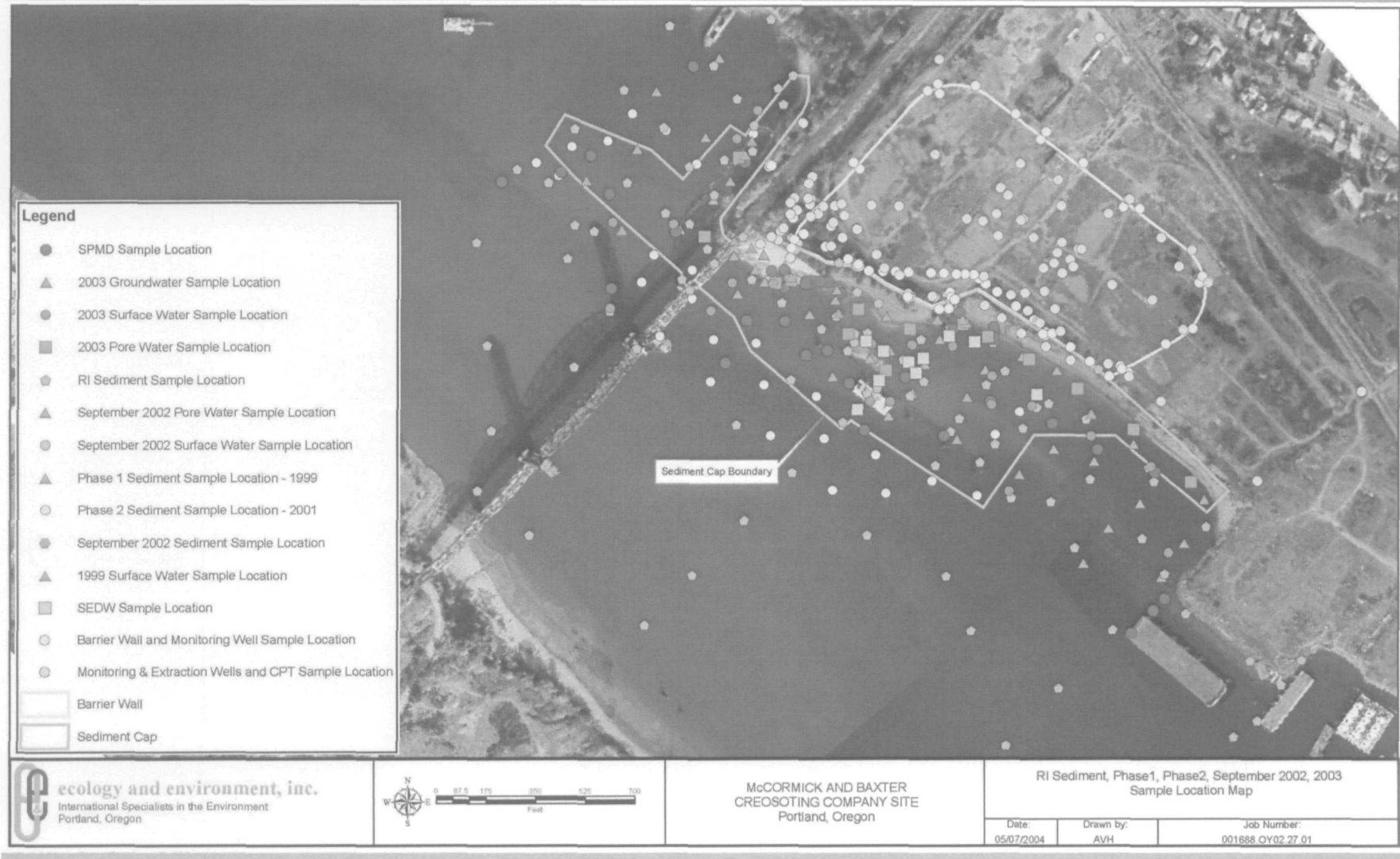
Manual Recovery



Automated Recovery



# Soil, Sediment, Groundwater and Surface Water Investigations (1990 through 2004)

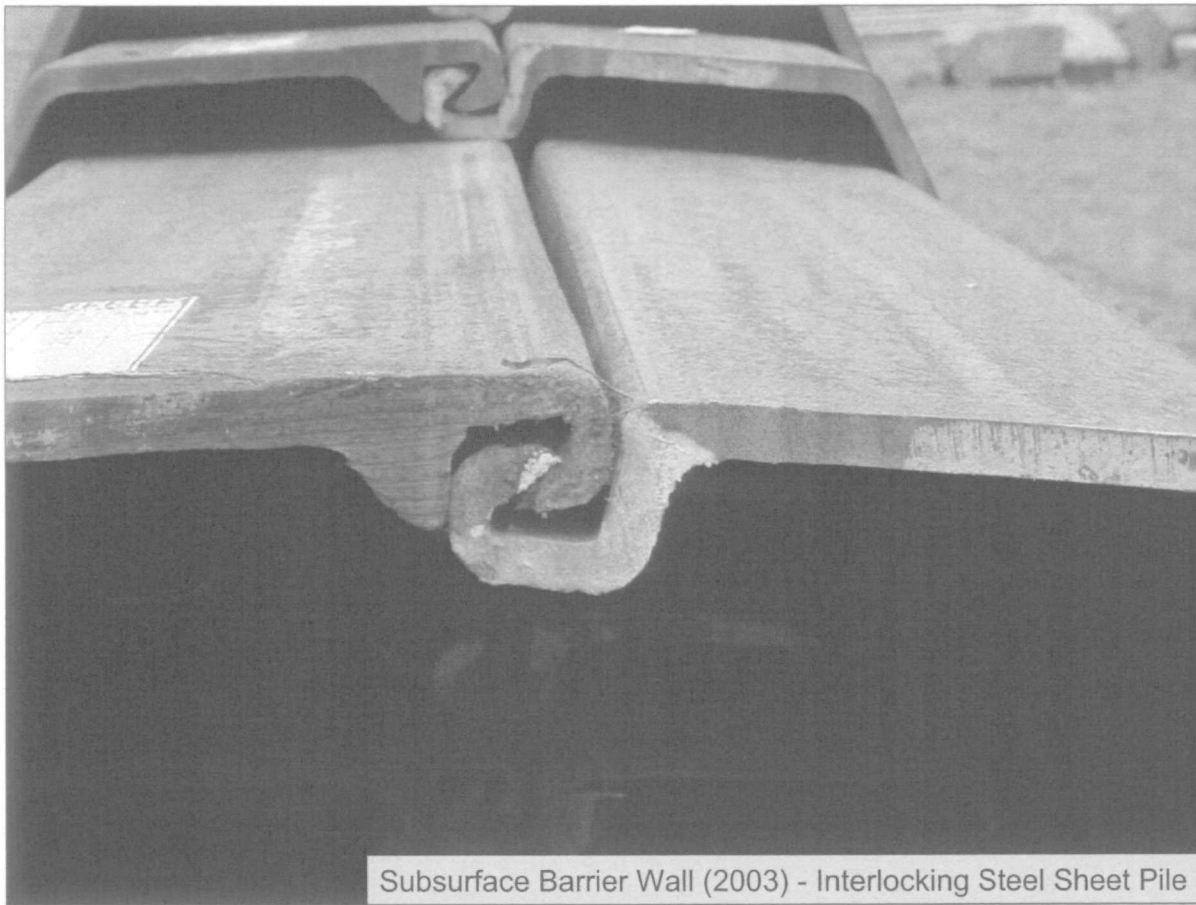




Excavation of Creosote Contaminated Soils (1999)



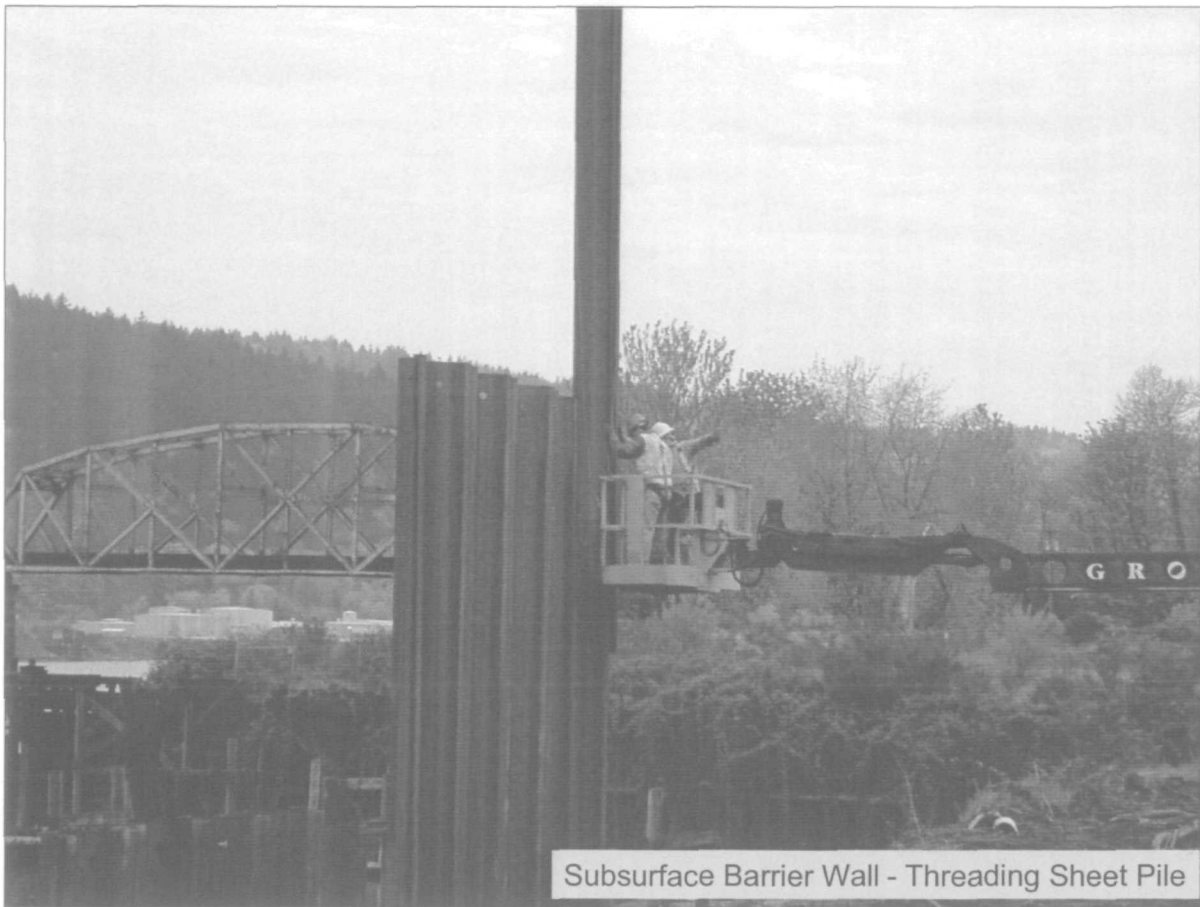
Excavation of Creosote Contaminated Soils (1999)



Subsurface Barrier Wall (2003) - Interlocking Steel Sheet Pile



Subsurface Barrier Wall – Construction Cranes



Subsurface Barrier Wall - Threading Sheet Pile



Subsurface Barrier Wall – Setting Vibratory Head



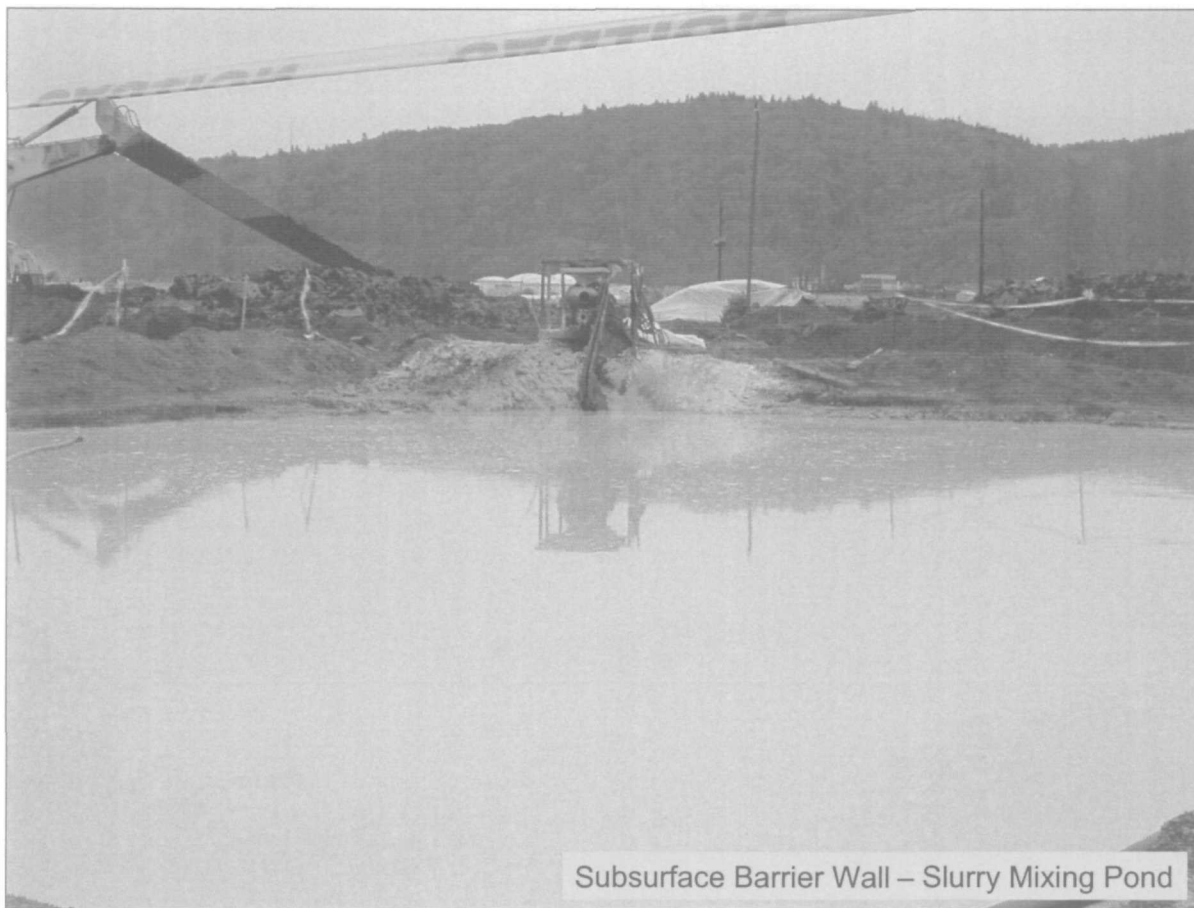


Subsurface Barrier Wall – Sheet Pile

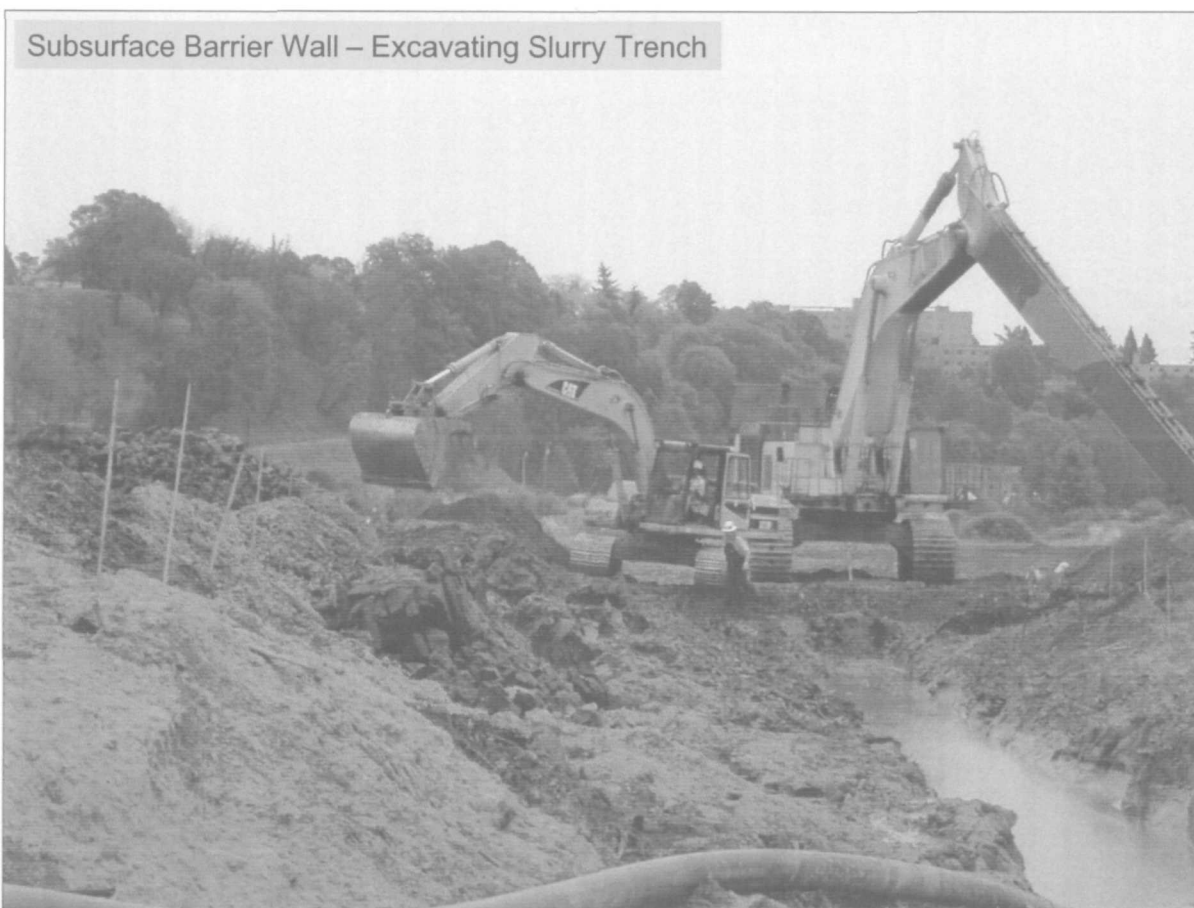


Subsurface Barrier Wall – Sheet Pile





Subsurface Barrier Wall – Slurry Mixing Pond



Subsurface Barrier Wall – Excavating Slurry Trench

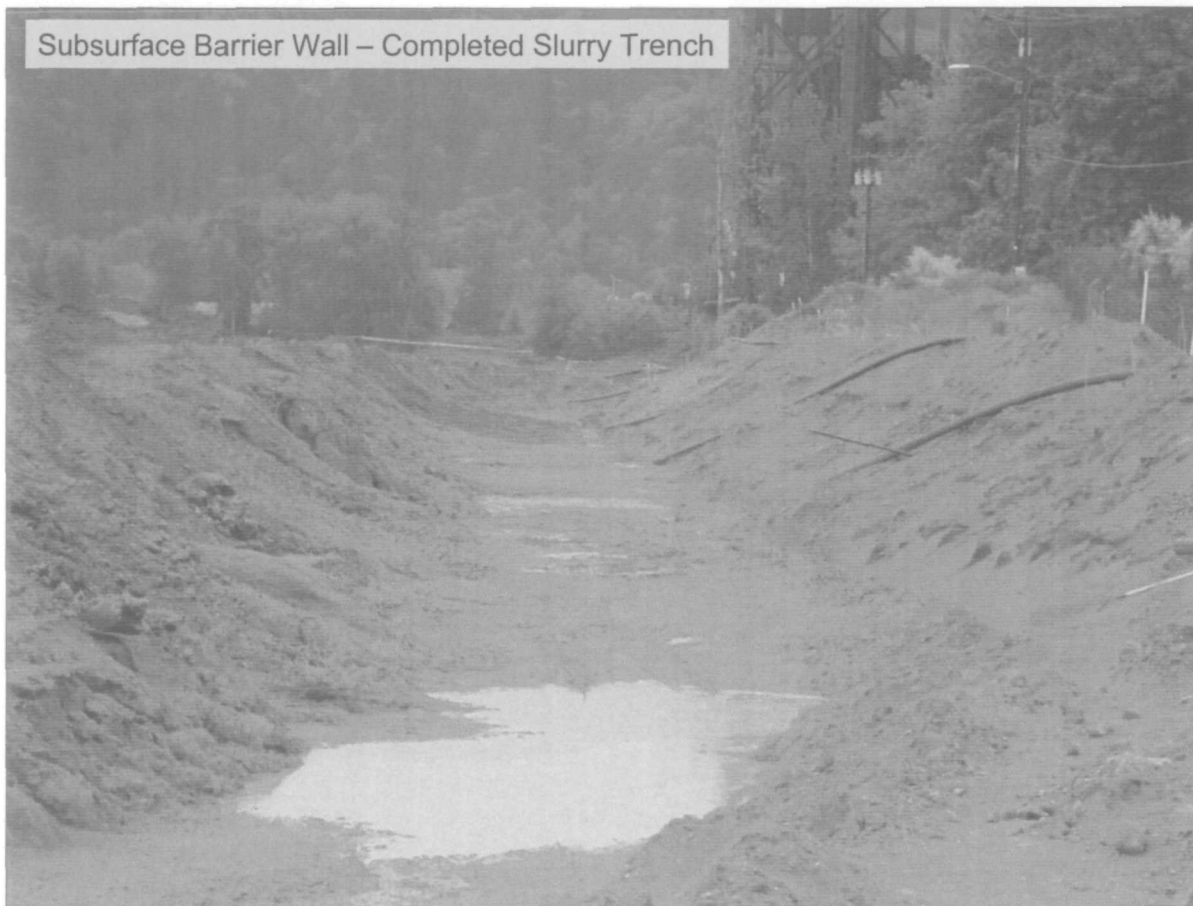


Subsurface Barrier Wall – Mixing Soil Slurry



Subsurface Barrier Wall – Placing Soil Slurry

Subsurface Barrier Wall – Completed Slurry Trench



Subsurface Barrier Wall – Completed



Sediment Cap (2004) – Fish Exclusion



Sediment Cap – Piling Removal





Sediment Cap – Piling Removal

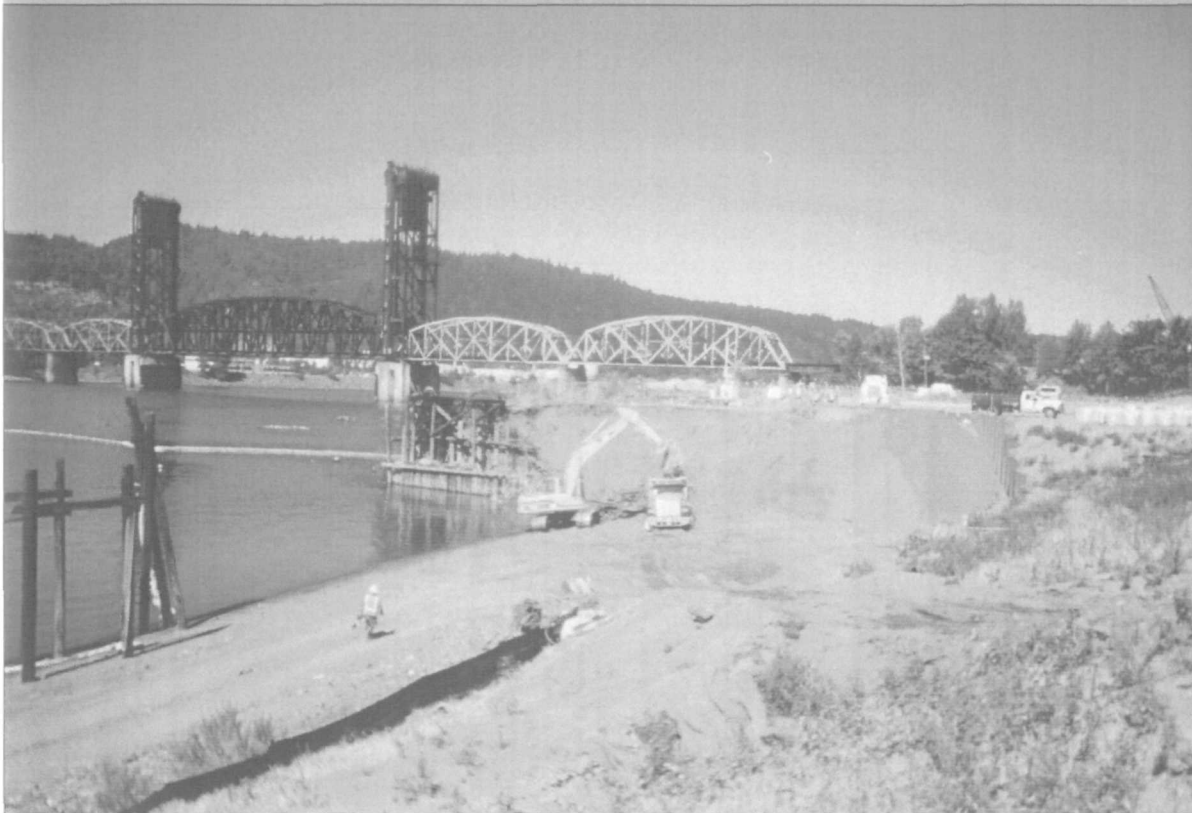


Sediment Cap – Old Wooden Barge Demolition

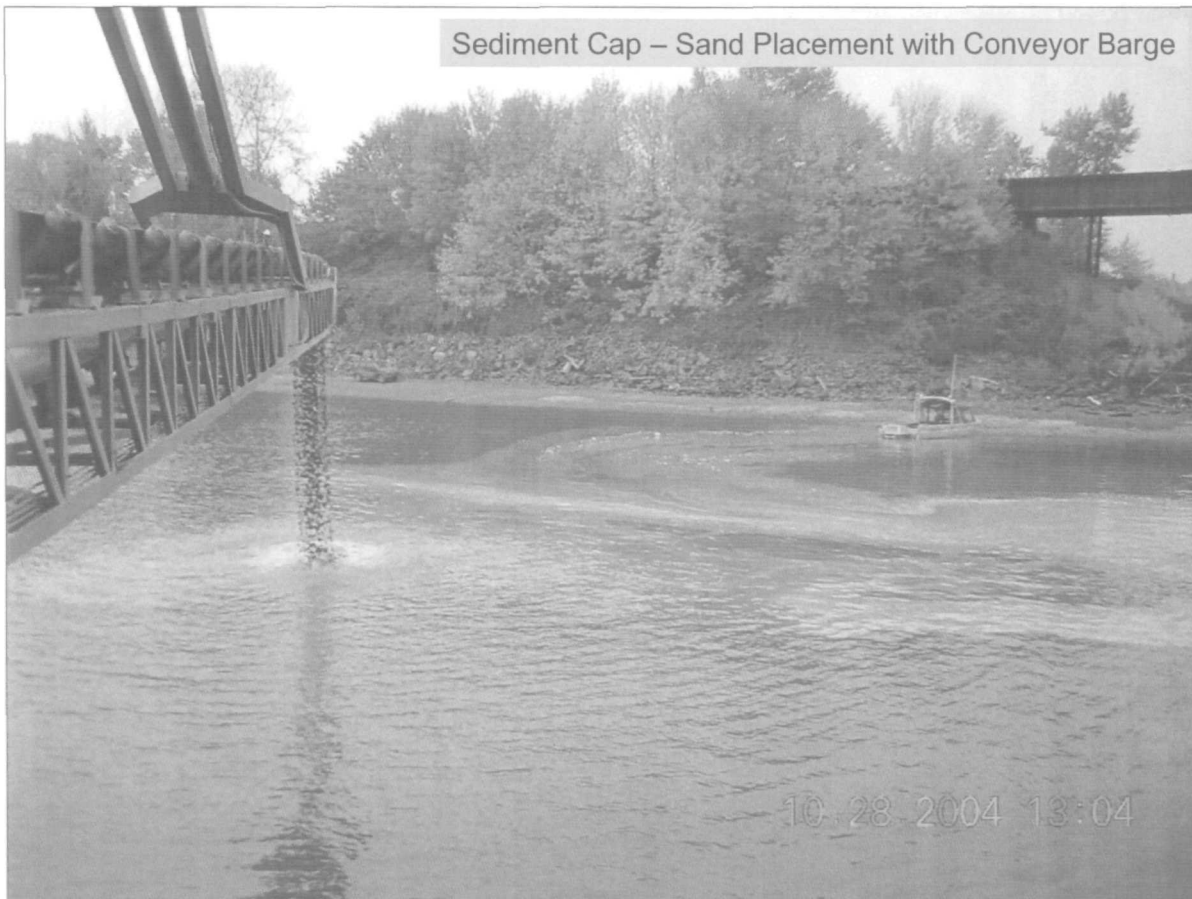
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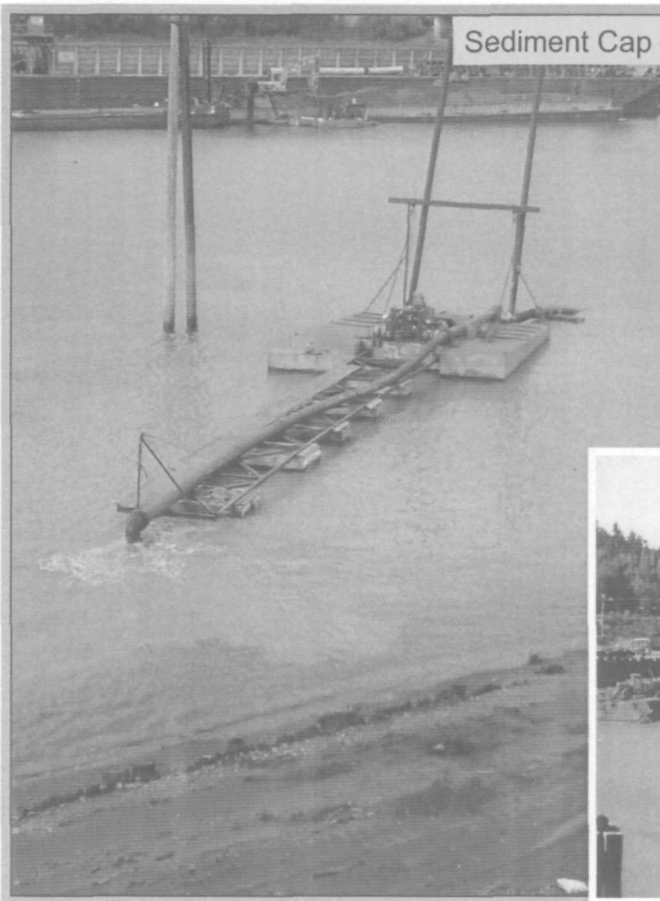
Sediment Cap – Wooden Dock Demolition



Sediment Cap – Sand Placement with Conveyor Barge



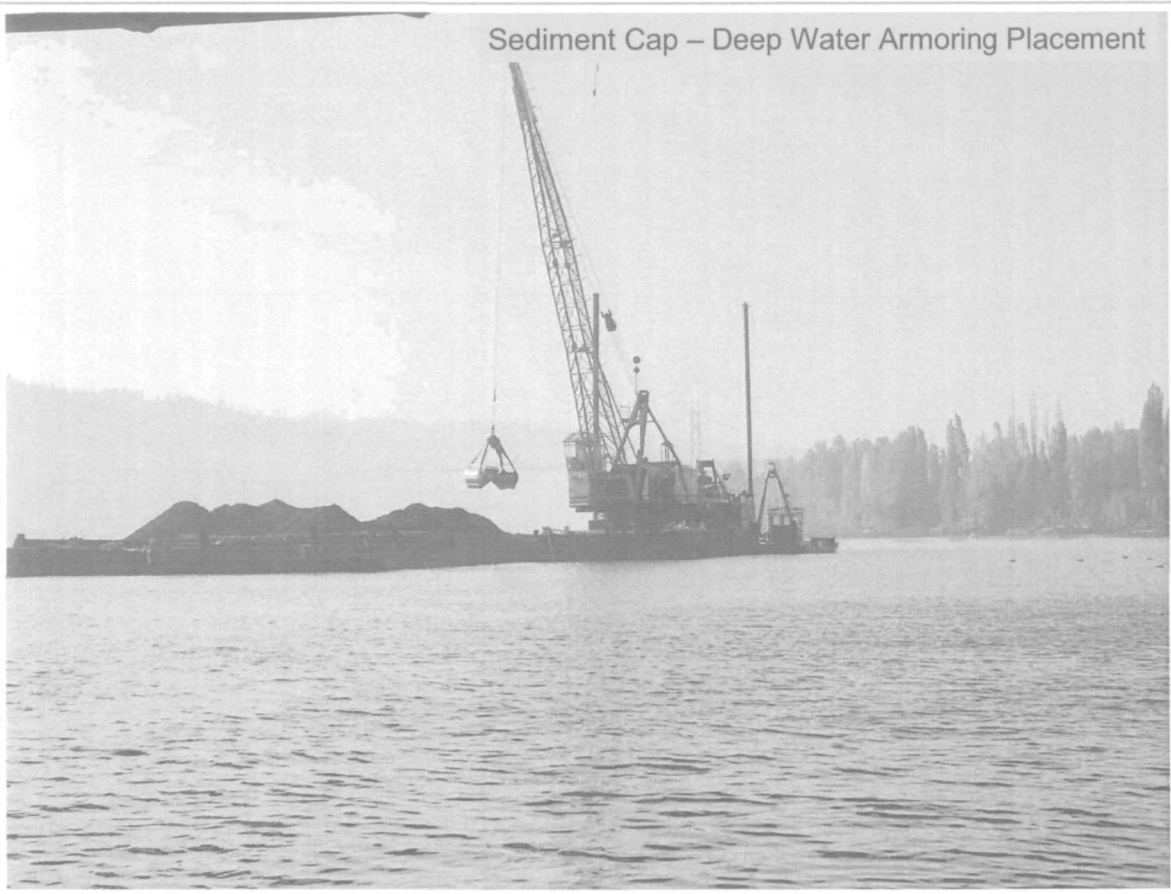
Sediment Cap – Sand Placement by Reverse Dredge



Sediment Cap – Filter Gravel Placement

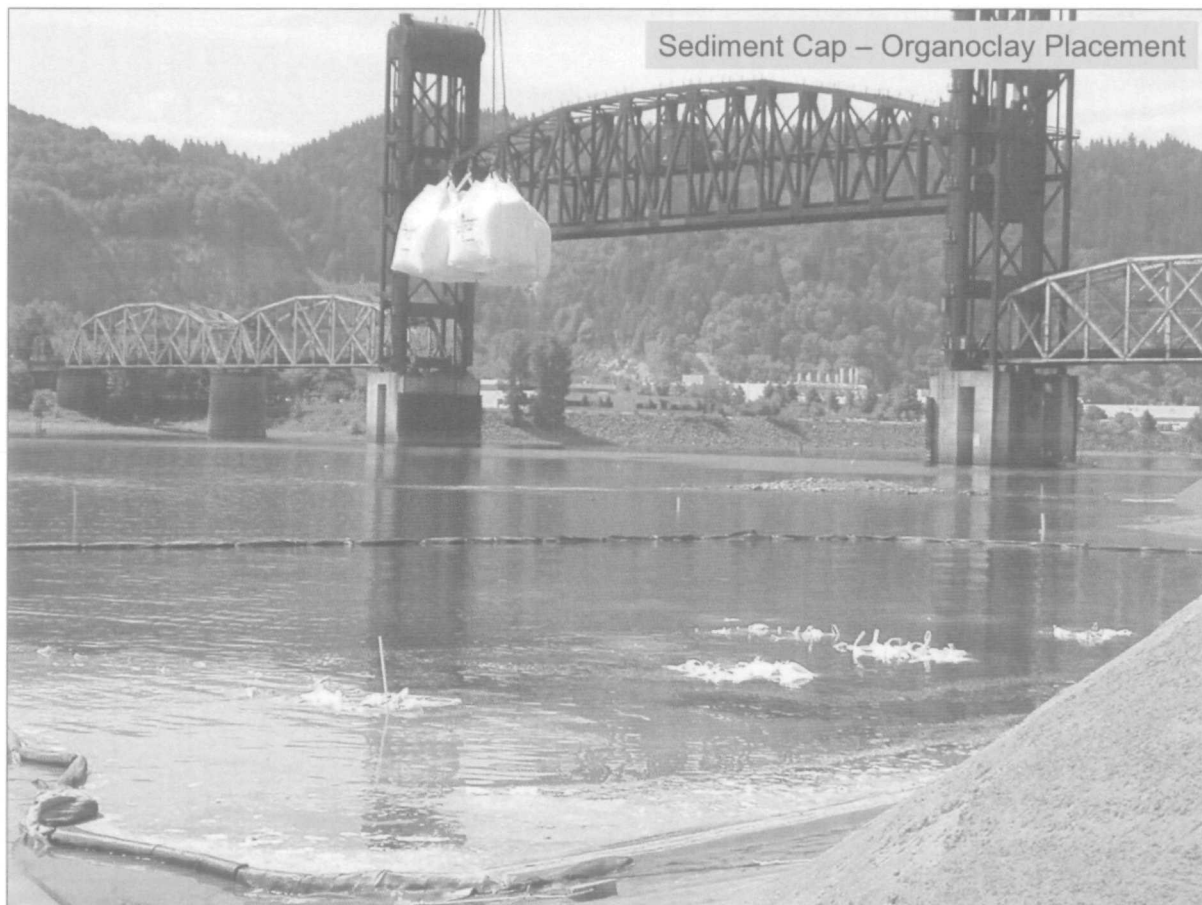
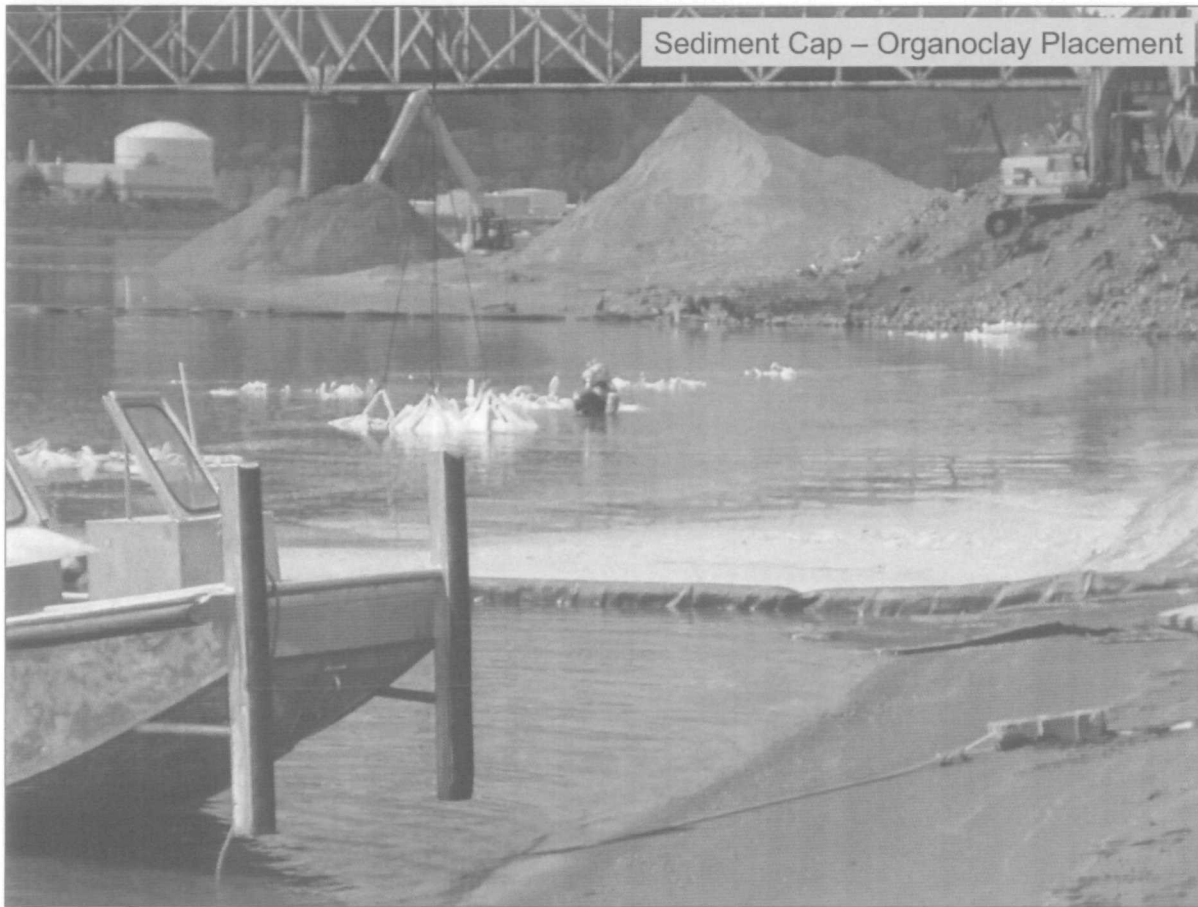


Sediment Cap – Deep Water Armoring Placement

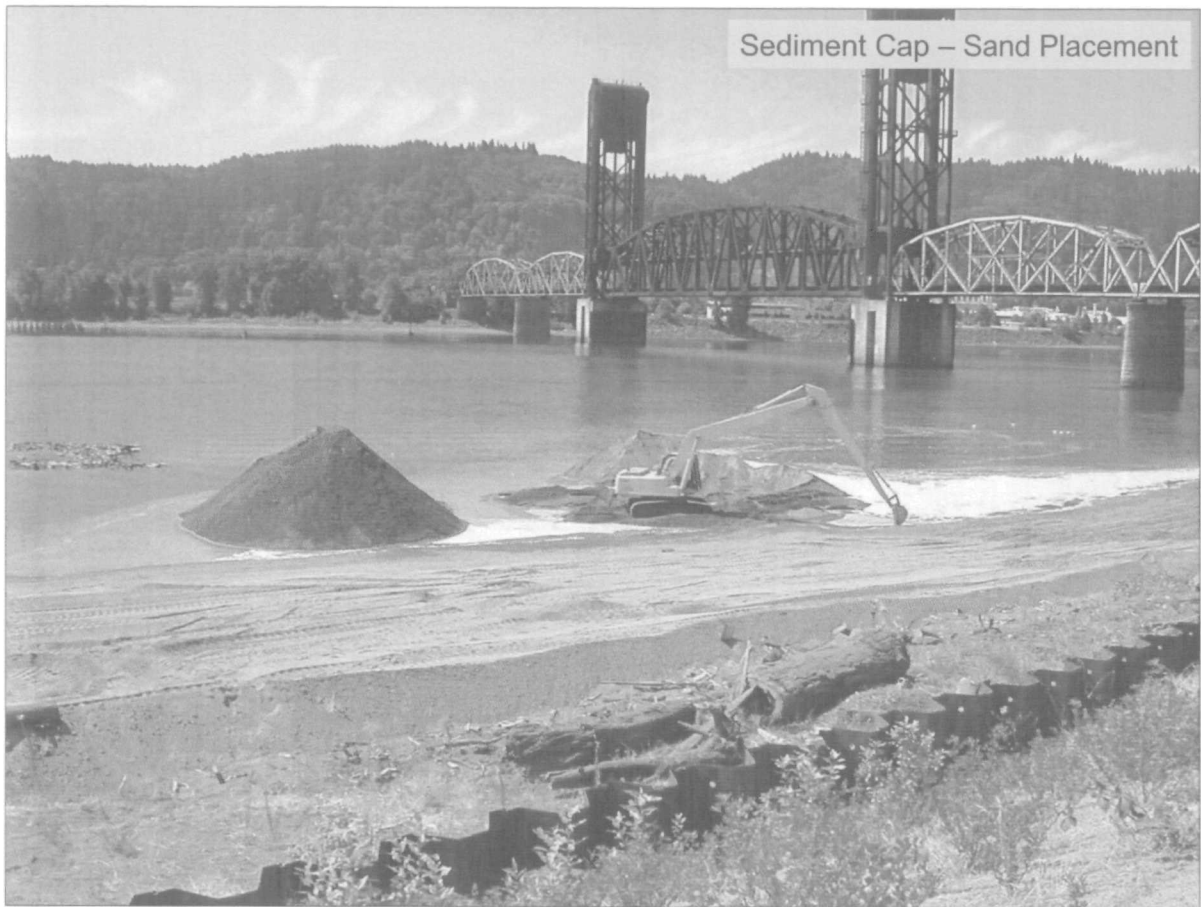


Sediment Cap – Leveling Beam

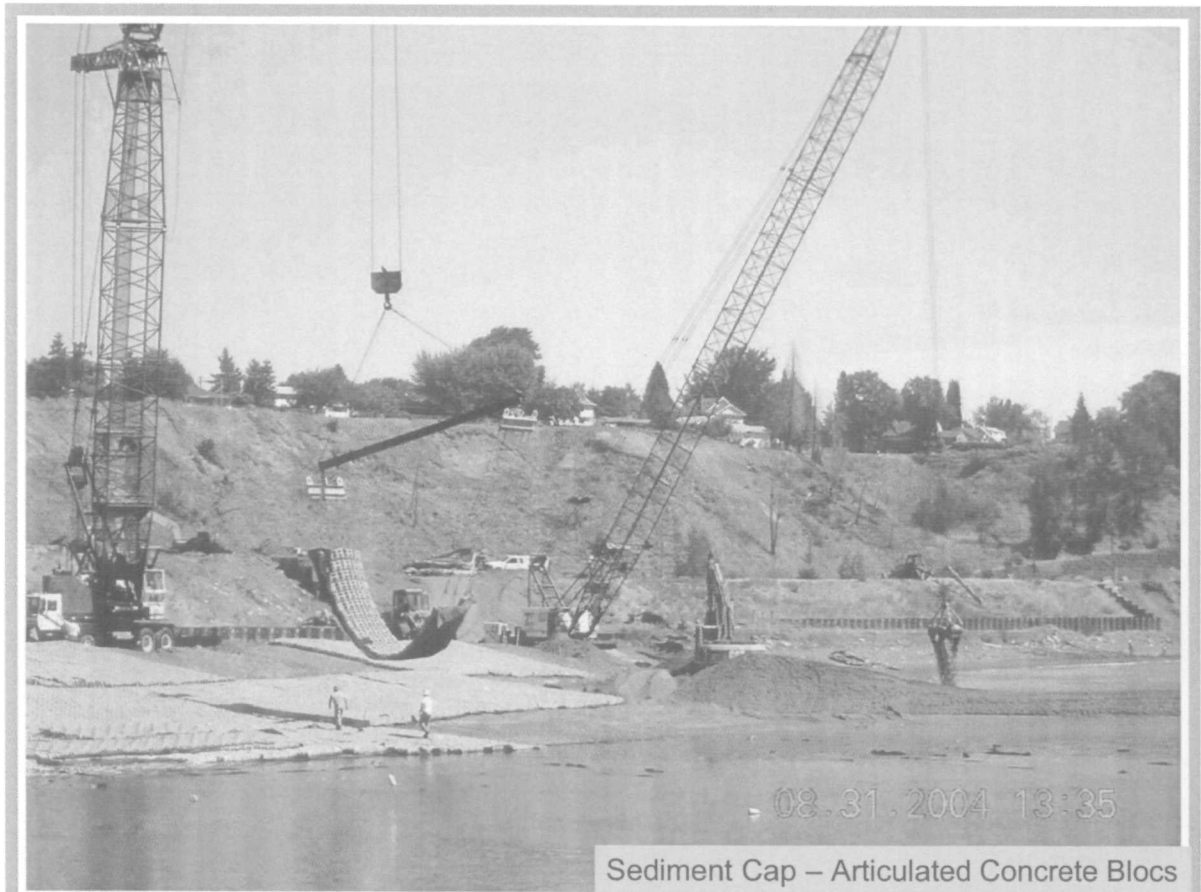








Sediment Cap - Sand Placement



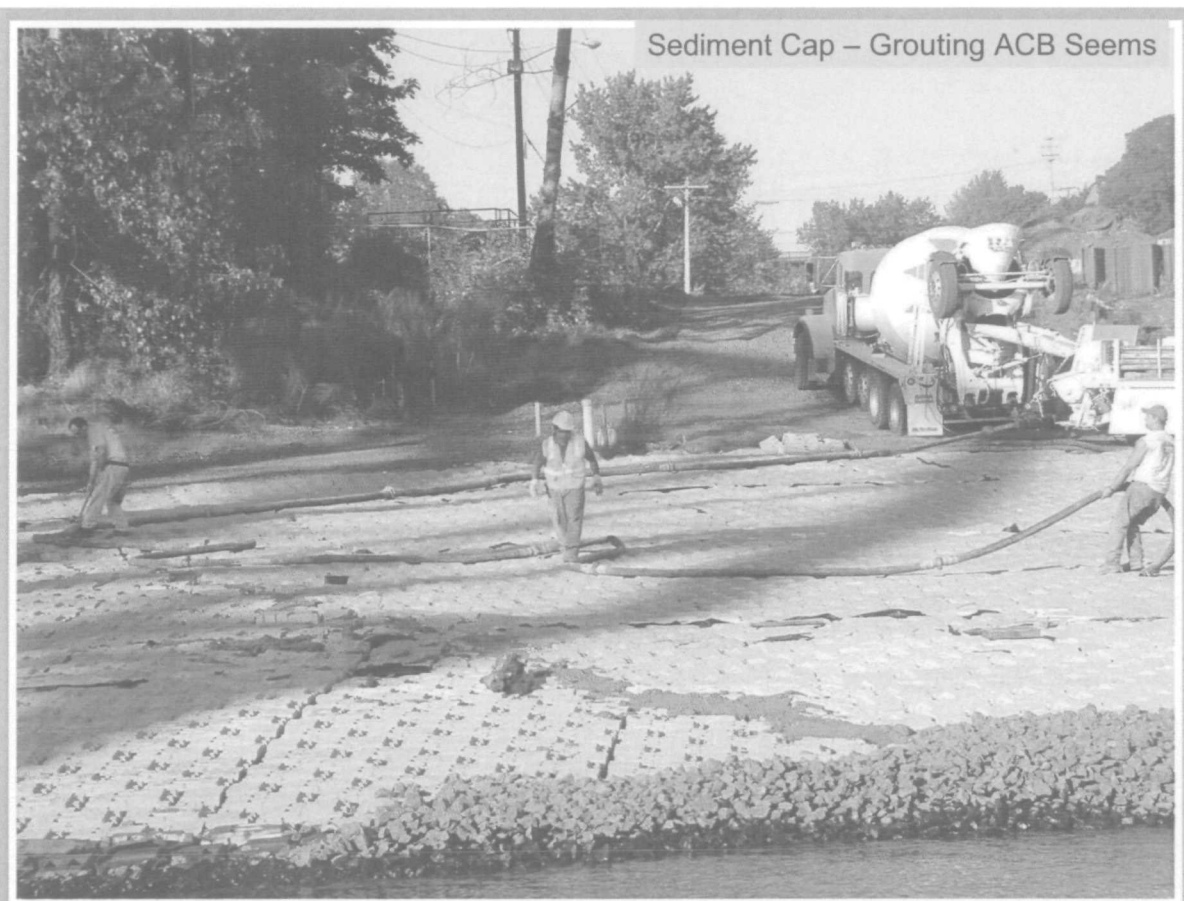
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Sediment Cap - Articulated Concrete Blocs





Sediment Cap – Articulated Concrete Blocs

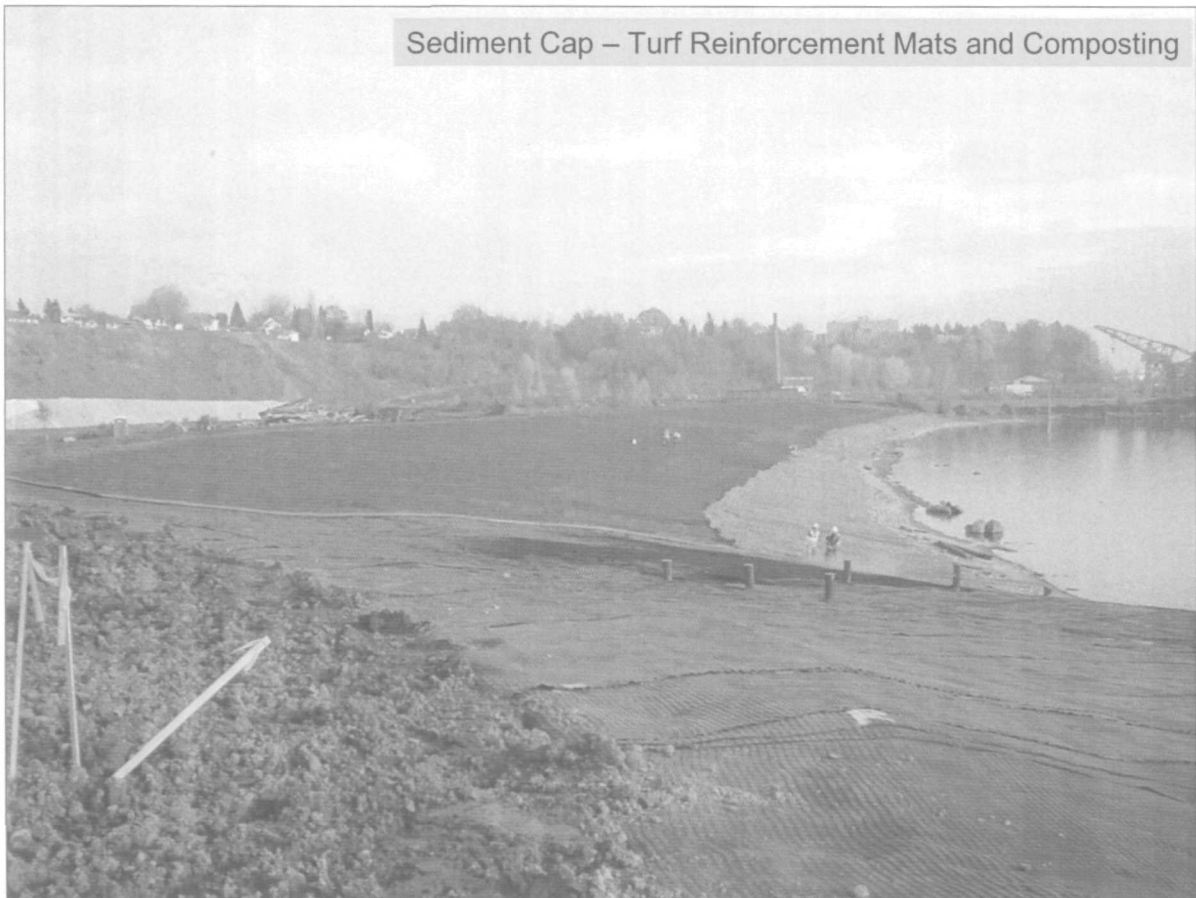


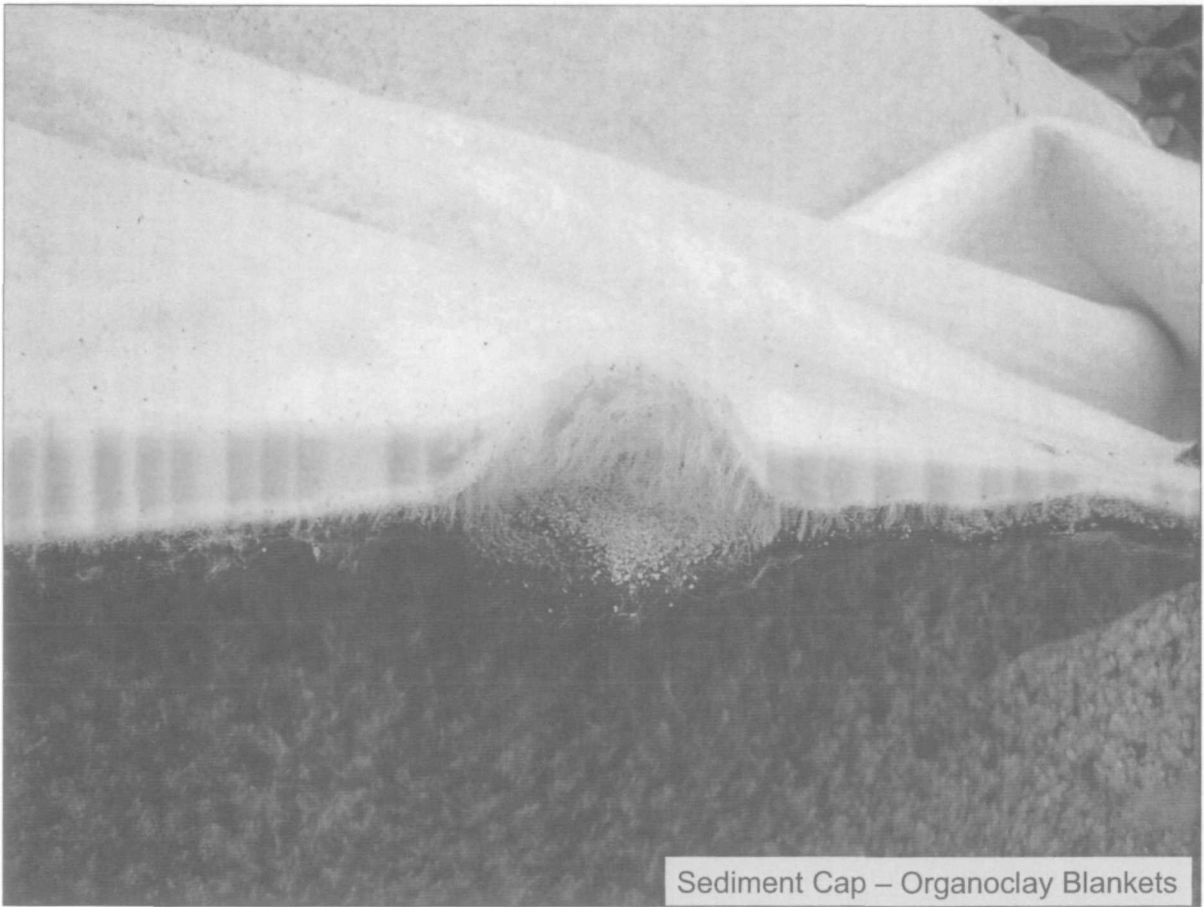
Sediment Cap – Grouting ACB Seams

Sediment Cap – ACB Anchor Trench



Sediment Cap – Turf Reinforcement Mats and Composting





Sediment Cap – Organoclay Blankets



Sediment Cap – Organoclay Blankets



Sediment Cap – Organoclay Blankets



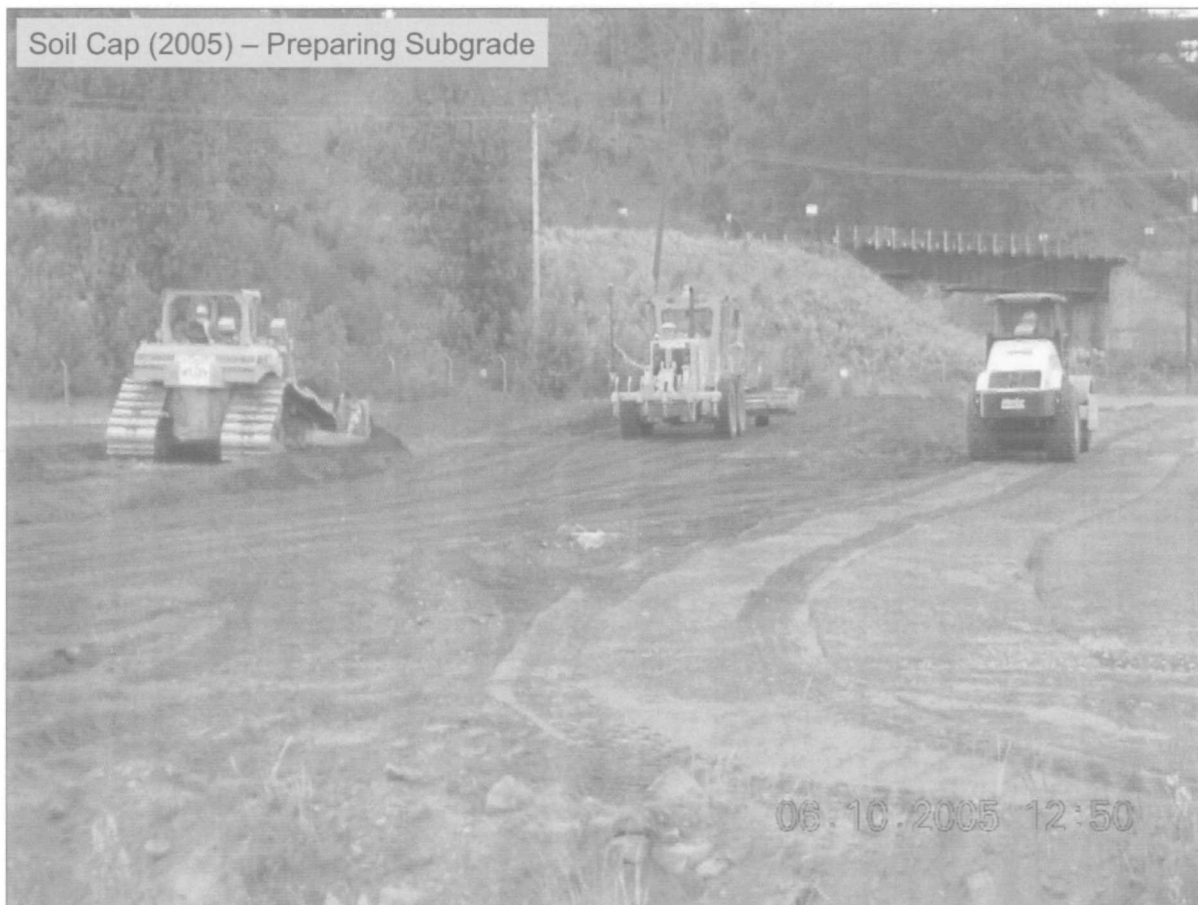
Sediment Cap – Organoclay Blankets



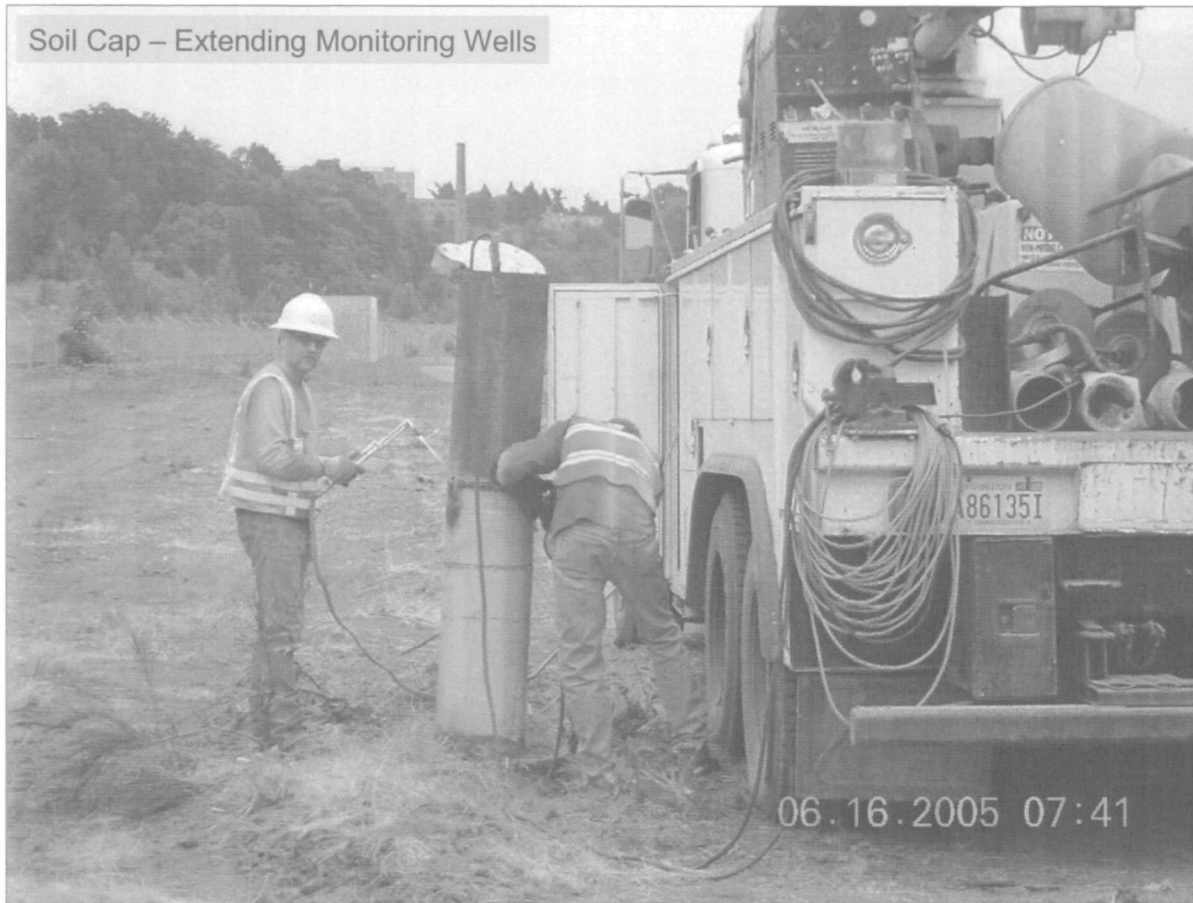
Sediment Cap (2005) – Placing Sand Over Organoclay



Soil Cap (2005) – Preparing Subgrade



Soil Cap – Extending Monitoring Wells



Soil Cap – Relocating Stockpiled Drift Logs



Soil Cap – Installing Manholes and Effluent Piping



Soil Cap – Extrusion Welding



Soil Cap – Rainwater Effluent Outfall

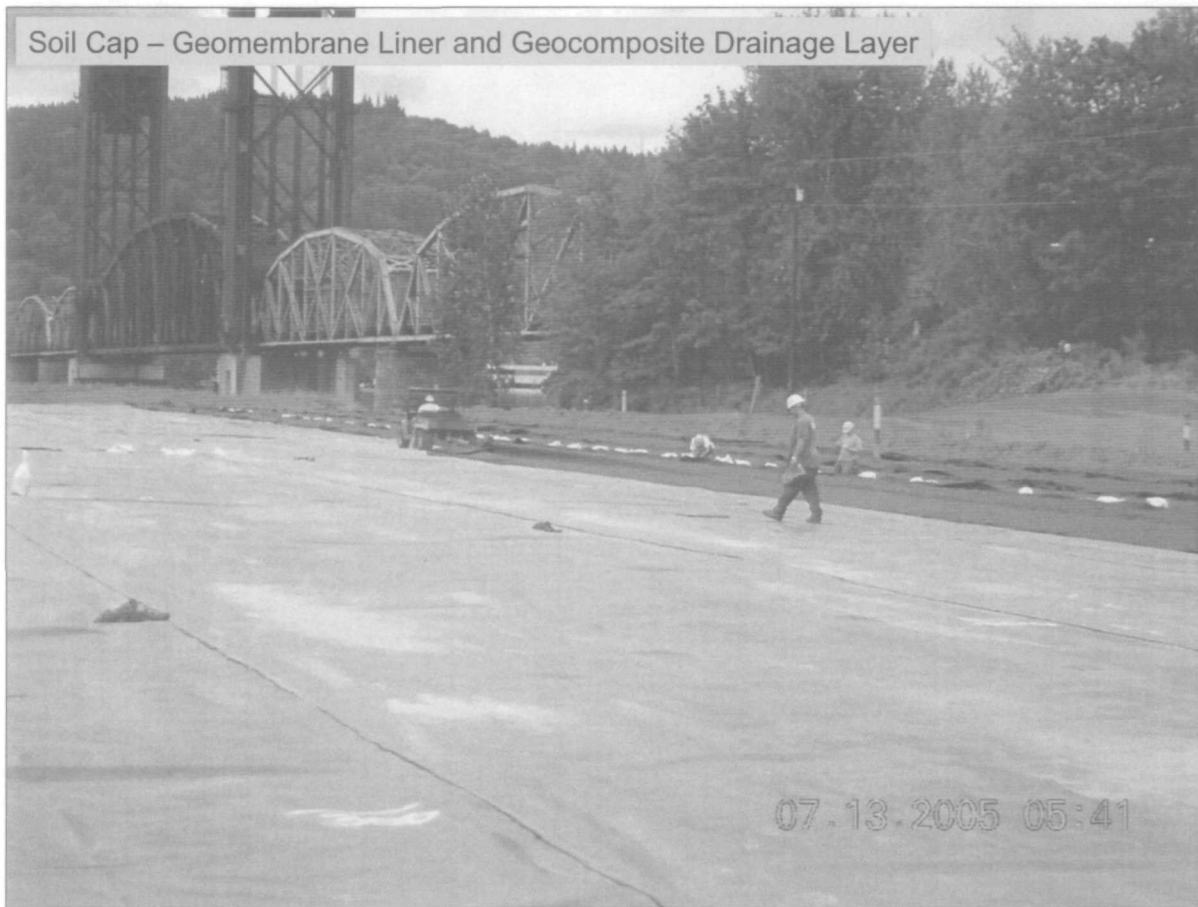


Soil Cap – Geomembrane Liner





Soil Cap – Geomembrane Liner and Geocomposite Drainage Layer



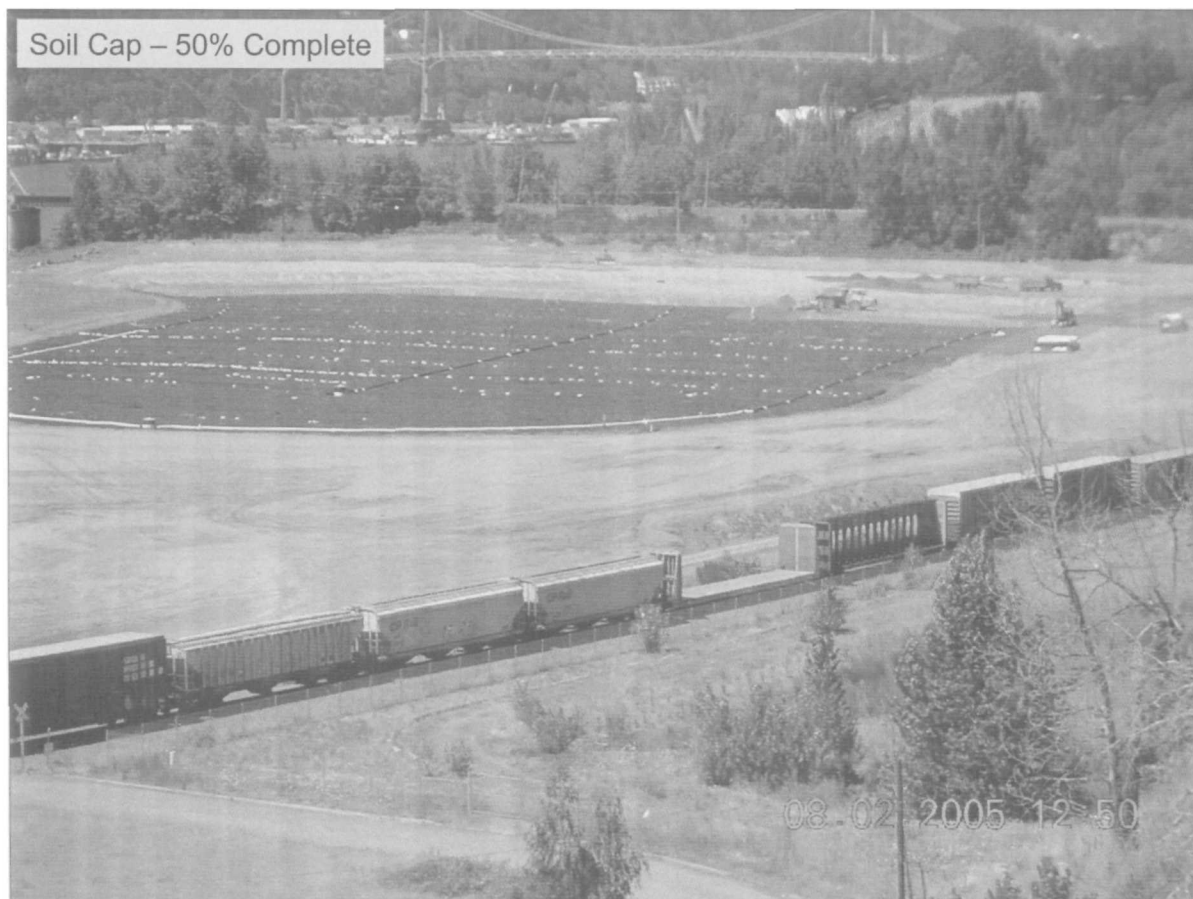
Soil Cap – Fusion Welding Geomembrane Panels



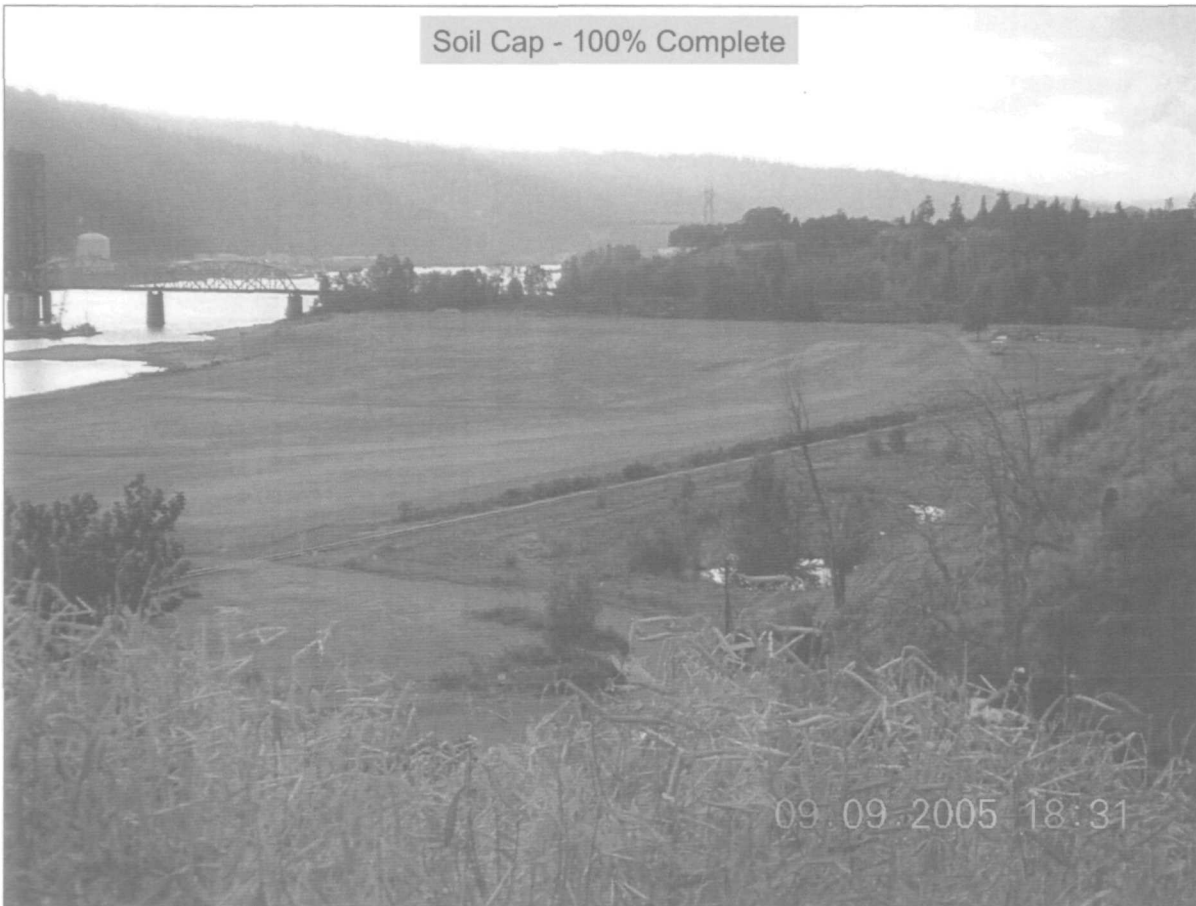
Soil Cap – Placing Sand Drainage Layer



Soil Cap – 50% Complete



Soil Cap - 100% Complete



Current Beach Front (2005)

